

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/445,845	06/11/2001	Timo Aittola	639321.005(M	1440	
7590 05/10/2004			EXAMINER		
Anita Lomart		VU, THONG H			
Cummings & 1	Lockwood	ADTIBUT	DARED MU (DED		
PO Box 1960		ART UNIT	PAPER NUMBER		
New Haven, CT 06509-9958			2142		
			DATE MAILED: 05/10/2004	. / /	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary		Application No.		Applicant(s)				
		09/445,845		AITTOLA, TIMO				
		Examiner		Art Unit				
		Thong H Vu		2142				
The MAILING DA Period for Reply	TE of this communication app	pears on the cov	er sheet with the d	correspondence ad	dress			
THE MAILING DATE OI - Extensions of time may be available after SIX (6) MONTHS from the - If the period for reply specified a lif NO period for reply is specified. - Failure to reply within the set or	TTORY PERIOD FOR REPLY THIS COMMUNICATION. Iable under the provisions of 37 CFR 1.13 mailing date of this communication. above is less than thirty (30) days, a reply d above, the maximum statutory period w extended period for reply will, by statute, a later than three months after the mailing See 37 CFR 1.704(b).	36(a). In no event, he within the statutory will apply and will exp, cause the applicatio	owever, may a reply be tir minimum of thirty (30) day ire SIX (6) MONTHS from n to become ABANDONE	mely filed ys will be considered timely the mailing date of this or ED (35 U.S.C. § 133).				
Status								
1) Responsive to cor	mmunication(s) filed on <u>09 Fe</u>	ebruary 2004.						
2a) This action is FIN.	AL . 2b)⊠ This	action is non-f	inal.					
3) Since this applica	☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is							
closed in accorda	closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.							
Disposition of Claims								
4a) Of the above of 5) ☐ Claim(s) is 6) ☑ Claim(s) <u>1-46 and</u> 7) ☐ Claim(s) is 6.	Claim(s) 1-46 and 48 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. Claim(s) is/are allowed. Claim(s) 1-46 and 48 is/are rejected. Claim(s) is/are objected to. Claim(s) is/are objected to.							
Application Papers								
10) The drawing(s) file Applicant may not re Replacement drawin	s objected to by the Examine of on is/are: a) according a constant any objection to the ong sheet(s) including the correct ation is objected to by the Examine.	epted or b)⊡ o drawing(s) be he tion is required if	eld in abeyance. Se the drawing(s) is ob	ee 37 CFR 1.85(a). Djected to. See 37 CF				
Priority under 35 U.S.C. §	119							
12) Acknowledgment i a) All b) Some 1. Certified co 2. Certified co 3. Copies of the application	s made of a claim for foreign	s have been re s have been re rity documents u (PCT Rule 17	ceived. ceived in Applicat have been receive (.2(a)).	ion No ed in this National	Stage			
Attachment(s)								
1) Notice of References Cited		4) [Interview Summary					
Notice of Draftsperson's Pat Information Disclosure State Paper No(s)/Mail Date	ent Drawing Review (PTO-948) ement(s) (PTO-1449 or PTO/SB/08) -	5) [6) [Pate Patent Application (PTC	O-152)			

Application/Control Number: 09/445,845 Page 2

Art Unit: 2142

1. Claims 1-46, and 48 are pending.

2. Applicant's arguments with respect to claims 1-47 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 3. Claims 1,2,5,12-15,17-22,24,25,27,28,30-35,37-42,44-46,48 are rejected under 35.S.C. 102(e) as being anticipated by Yates et al [Yates 6,167,438].
- 4. As per claim 1, Yates discloses a method for serving requests for Internet information files in an Internet caching system, comprising the steps of:

receiving, at a local Internet cache server (i.e.: cache server 38), a user request from a user (i.e.: client 12-1) for an Internet information file Yates, a user requests information via Internet including a plurality of cache server to a home server, col 5 line 55-col 6 line 45, Fig 1];

in response to the received request, making a query for said information file, if said information file has not been cached by said local server [Yates, the cache query,

Art Unit: 2142

col 9 lines 1-7, col 10 lines 4-15, 53-63, col 11 lines 12-19; relay request, col 11 lines 37-49];

in response to a reply to said query, making a file request for said information file, wherein said, file request is directed to a feeder (resource manager) means if said reply indicates that a central file server, storing cached Internet information files, has said information file cached [Yates, a resource manager, col 7 line 64-col 8 line 5; a single particular document is considered as being located at only one home server, col 6 line 62-col 7 line 8]; and

querying, from said feeder means in response to said file request, said central file server for said information file, in order to decrease the load on said central file server [Yates, off-load excess load at the home server, col 7 lines 17-27, load balancing, col 8 lines 29-33;col 13 line 57-col 14 line 7]. It was clear that the cache server reducing the workload from a Web home/central server.

- 5. Claims 18,39 contain the similar limitations set forth of claim 1. Therefore, claims 18,39 are rejected for the similar rationale set forth in claim 1.
- 6. As per claim 2, Yates discloses said query is performed by said local cache server in accordance with a protocol used for communicating between Internet Cache servers [Yates, a local cache server connected to a home/central server via Internet, col 5 line 55-col 6 line 45].

Art Unit: 2142

7. As per claim 5, Yates discloses said query is directed by said local cache server to said feeder means, which feeder means as a response returns said reply as inherent feature of the local cache server with a resource manager.

- 8. As per claim 12, Yates discloses creating an indexed table having an entry for each Internet information file being cached at said central file or home server [Yates, index structure, col 8 lines 5-13].
- 9. As per claim 13, Yates discloses performing a search in said indexed table for said information file [Yates, search index files col 17 lines 60-67]; and indicating in said reply to said query whether or not said information file was found during said search as inherent feature of search index file.
- 10. As per claim 14, Yates discloses said querying step comprises using the Structured Query Language (SQL) when querying said central file server for said information file as inherent feature of database.
- 11. As per claim 15, Yates discloses selecting, based upon an original host name or IP-address of said information file, a central file server out of a set of central file servers [Yates a different home server, col 7 lines 1-8], each server of said set being arranged to cache Internet information files with original host names or IP-addresses within a predefined range [Yates, the request is not permitted to continue on its way to the home

server, col 7 lines 35-45]; and querying the selected central file server for said information file [Yates, the request continues to the next router on the path to the home server, col 7 lines 35-45].

- 12. As per claim 17, Yates discloses retrieving, at said local cache server, said information file from its origin server if said reply to said query indicates that said information file is not cached at said central file server; caching said information file at said local cache server; and updating said central file server by requesting a copy of said information file from said local cache server and caching said copy in said central file server [Yates, updated as necessary by the local cache server, col 7 lines 45-55].
- 13. As per claim 19, Yates discloses said first means is arranged to operate in accordance with a layer three Internet protocol [Yates, TCP/IP col 9 lines 7-24].
- 14. As per claim 20, Yates discloses said third means is arranged to use the Structured Query Language (SQL) when querying for said Internet information file as inherent feature of database.
- 15. As per claims 21,27 Yates discloses said alphanumerical string is included in said request received from said local cache server using said query derived by said second means as inherent feature of cache server.

Art Unit: 2142

16. As per claim 24, Yates discloses said Feeder includes fourth means for receiving a query for an Internet information file from said local cache server; and fifth means for providing said local cache server with a reply to the received query as inherent feature of cache server.

- 17. As per claim 25, Yates discloses said fourth means and said fifth means are arranged to operate in accordance with a protocol used for communicating between Internet cache servers as inherent feature of cache server and TCP/IP.
- 18. As per claim 30, Yates discloses said Feeder includes a table with a copy of the full index of all Internet information files cached at said-central file server [Yates, search index files col 17 lines 60-67].
- 19. As per claim 31, Yates discloses said reply to said received query by said fifth means is based on the content of said table [Yates, routing table, col 12 lines 48-53].
- 20. As per claim 32, Yates discloses requesting means for requesting a copy of an Internet information file stored in a local cache server; and storing means for storing the thereby received copy in a central file-server as inherent feature of cache server.

Application/Control Number: 09/445,845 Page 7

Art Unit: 2142

21. As per claim 33, Yates discloses said requesting means are arranged to request a copy of an information file from its origin server, if a local cache server storing said information file resides behind a firewall (i.e.: router) [Yates, routers, col 6 lines 31-39].

- 22. As per claim 34, Yates discloses said Updater is arranged to communicate with said Feeder for receiving an order to request said copy of said information file [Yates, updated as necessary by the local cache server, col 7 lines 45-55].
- 23. As per claims 35,48 Yates discloses said Updater includes a list of known uncachable information files, for which files a copy should not be requested as inherent feature of updated [Yates, updated as necessary by the local cache server, col 7 lines 45-55].
- 24. As per claim 37, Yates discloses said Updater is implemented by a lower end computer and said central file server is implemented by a higher end computer as inherent feature of updated [Yates, updated as necessary by the local cache server, col 7 lines 45-55].
- 25. As per claim 38, Yates discloses said Updater and at least one Feeder are implemented by a single lower end computer as inherent feature of updated [Yates, updated as necessary by the local cache server including a resource manager, col 7 lines 45-col 8 line 5].

26. As per claim 40, Yates discloses said feeder means are included in said central cache site or home server [Yates, home server, col 5 line 55-col 6 line 45].

- 27. As per claim 41, Yates discloses each of said feeder means includes a plurality of Feeders, each of said Feeder interconnecting a subset of said set of local cache servers with said central file server [Yates, a plurality of local cache servers and home server, col 5 line 55-col 6 line 45].
- 28. As per claim 42, Yates discloses said central cache site is arranged to serve a defined set of local cache servers, which set in turn serves a linguistically and culturally homogenous user community as inherent feature of central DNS cache server [Yates DNS, col 7 lines 8-16].
- 29. As per claim 44, Yates discloses each of said Feeder includes a table with a copy of the full index of all information files cached at said central cache site as inherent feature of index database.
- 30. As per claim 45, Yates discloses said central file server includes cached Internet information files having original host names within a predefined range [Yates, router determine the next hop, col 7 lines 45-55].

Art Unit: 2142

31. As per claim 46, Yates discloses updater means, interconnecting said central file server with at least one local cache server of said set, for retrieving a copy of an Internet information file form its origin server or from said at least one local cache server and for storing said copy in said central file server [Yates, a plurality of local cache servers and home server, col 5 line 55-col 6 line 45].

- 32. As per claim 22, Yates discloses said query is derived from said alphanumerical string and at least part of a header information field of said request received from said local cache server using said query derived by said second means as inherent feature of message.
- 33. As per claim 28, Yates discloses said query derived by said second means is derived from said alphanumerical string and at least part of a header information field of said query received from said local cache server as inherent feature of message..

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 34. Claims 6-11,16,23,29 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yates et al [Yates 6,167,438] in view of Harel [5,873,081].

Art Unit: 2142

35. As per claim 10, Yates discloses said file request provides an alphanumerical string associated with said information file, said string being used by said feeder means [Yates corresponding name and address records, col 3 line 55-col 6 line 2]. However Yates does not teach deriving a query number corresponding to said information file.

A skilled artisan would have motivation to improve the query process on Yates system and found Harel's teaching. Harel, in a method and mechanism for filtering incoming electronic document against user queries, taught a filtering process including a matching list containing term and query identifiers (or query number) which associated to the document delivery [Harel col 11 lines 15-33]

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated the query identifiers or query number associated to the delivery file as taught by Harel into the Yates's apparatus in order to utilize the database query. Doing so would provide a quick and easy for searching and filtering data over a large system.

- 36. As per claim 6, Yates-Harel disclose deriving, at said feeder means, a query number corresponding to said information file being concerned in said query [Harel col 11 lines 15-33].
- 37. As per claim 7, Yates-Harel disclose using the derived query number when querying said central file server for said information file [query identifier, Harel col 11 lines 15-33].

Art Unit: 2142

- 38. As per claim 8, Yates-Harel disclose said query provides an alphanumerical string associated with said information file, said string being used in said step of deriving said query number [query identifier, Harel col 11 lines 15-33].
- 39. As per claims 9 and 11, Yates-Harel disclose said alphanumerical string is a Uniform Resource Locator (URL), said query number is derived from said URL and at least part of a header information field of said file request [query identifier, Harel col 11 lines 15-33].
- 40. As per claim 16, Yates-Harel disclose selecting, based upon said query number derived for said information file [query identifier, Harel col 11 lines 15-33], a central file server out of a set of central file servers, each server of said set being arranged to cache Internet information files with corresponding query numbers within a predefined range [prefetcher means, Yates col 2 lines 42-50]; and querying the selected central file server for said information file as inherent feature of accessing data to one DNS server.
- 41. As per claims 23 and 29, Yates-Harel disclose said query comprises a query number [query identifier, Harel col 11 lines 15-33], the query number being derived by applying a hash algorithm to said string and to said part of said header information field as inherent feature of hash coding [Yates col 5 line 48-col 6 line 30].

Application/Control Number: 09/445,845 Page 12

Art Unit: 2142

42. As per claim 36, Yates-Harel disclose said Feeder is implemented by a lower end computer and said central file server is implemented by a higher end computer as inherent feature of server computers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 43. Claims 3-4,26,43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yates [6,016,512] in view of Wessels et al [Cache Digest, April 1998].
- 44. As per claims 3 and 4, Yates discloses an Internet environment wherein a client request information to a home/central server and a plurality of local cache server [Yates, a local cache server connected to a home/central server via Internet, col 5 line 55-col 6 line 45].

However Yates does not explicitly detail a protocol used is the Internet Cache Protocol or Cache Digest. It is well-known in the art that Internet Cache protocol (ICP) or Cache Digest was used among Web cache server to improve the exchange queries and replies [Wessels, abstract, page 1].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to realize that using the ICP or Cache Digest would provide the cache knows whether or not the neighbor holds the requested data. Doing so would

Art Unit: 2142

enhance the data flow process between Web client nodes, local cache servers and home/central servers over the large network.

45. Claims 26,43 contain the similar limitations set forth of claims 3-4. Therefore, claims 26,43 are rejected for the similar rationale set forth in claims 3-4.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thong Vu, whose telephone number is (703)-305-4643.

The examiner can normally be reached on Monday-Thursday from 8:00AM- 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Jack Harvey*, can be reached at (703) 305-9705.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9700.

Any response to this action should be mailed to: Commissioner of Patent and Trademarks, Washington, D.C. 20231 or faxed to:

After Final (703) 746-7238 Official: (703) 746-7239 Non-Official (703) 746-7240

Hand-delivered responses should be brought to Crystal Park 11,2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Thong Vu Patent Examiner Art Unit 2142

Mon